

Semester Lecture Plan

Name of the college: Government college of Arts Science and Commerce ,Sanquelim Goa						
Name of Faculty: Ms. TABSUM B		Subject: Mathematics				
Paper code: MAT 200 Calculus of one variable		Program/Course: SYBSC			Division:	
Academic year: 2026- 2027		Semester: III			Total Lectures: 60	
Course Objectives: to understand the concept of Real Number System, its Algebra, Order & Completeness properties, real sequence & its convergence. Also about the properties of Continuity & Differentiability of real valued functions, Approximation of functions,						
Expected course Outcome: 1) Explain the algebra and properties of the set of real numbers. 2) Analyze various real sequences, their properties, and examine their convergence. 3) Prove and apply results in limits and continuity and disprove false statements. 4) Prove and apply results in differentiability and disprove false statements.						
Student learning outcome: The student will be able to get a practical idea about detecting Infimum & Supremum of sets, judging the behaviour of continuous & differentiable functions						
Month	Lectures From: To:	No. of lectures allotted	Topic, Subtopic to be covered	Exercises/ assignment	ICT Tools	Reference books

July/Aug	28/07/20 26	01/08/20 26	04	Sequential criteria and $\epsilon-\delta$ definition of continuity	Examples on Continuity using ϵ & δ	Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
August	03/08/20 26	08/08/20 26	04	Intermediate value theorem; Extreme value theorem		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
August	10/08/20 26	15/08/20 26	04	Monotone functions; Limits		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
August	17/08/20 26	22/08/20 26	04	Uniform continuity and results in uniform continuity.		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
August	24/08/20 26	29/08/20 26	02	Results in uniform continuity.		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
Aug/Sep	31/08/20 26	05/09/20 26	04	Derivative of a function at a point; Geometric interpretation of a derivative		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,

Septemb er	07/09/20 26	12/09/20 26	04	Algebra of derivatives; Chain rule; Properties of the derivative, Rolle's theorem, Lagrange's Mean Value Theorem		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
Septemb er	14/09/20 26	19/09/20 26	00	Ganesh Chaturthi Break (14–19 Sep)			
Septemb er	21/09/20 26	26/09/20 26	04	Cauchy's Mean Value theorem, and their geometric significance, Darboux theorem for differentiable functions		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
Sep/Oct	28/09/20 26	03/10/20 26	04	Higher order derivatives' Taylor's theorem; Maclaurin's theorem, Leibnitz rule for higher order derivative of product of functions	Maclurin's series expansions	Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
October	05/10/20 26	10/10/20 26	04	Stationary points and their stationary point to be local maxima and minima;		Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,
October	12/10/20 26	14/10/20 26	2	Indeterminate forms	Additional examples on L Hospital's rule	Chalk & Board	A. Kumar, and S. Kumaresan: A Basic Course in Real Analysis,

* Assessment Rubrics

Component	Max Marks
ISA 1	10
ISA 2	10
Project	--
Semester End Exam	80